



### Specifications: HP690i

### Mounting hardware included

System Type	6.5" Coax, compression tweeter w/ 1" exit, open-ceiling, ported (66 Watt transformer for 25/70.7/100 Volt or voice coil / 8 Ohm direct)
Frequency Response (-3 dB) <sup>1</sup>	78 Hz - 22 kHz
Low Frequency (-10 dB) <sup>1</sup>	62 Hz - 22 kHz
Max. Program Power	200 Watts
Max. Continuous Power RMS <sup>2</sup>	100 Watts
Max. SPL dB @ 1 M	112.5 dB
Sensitivity dB @ 1W/1M <sup>3</sup>	92.5 dB
Impedance (nominal)	8 Ohm
Coverage Angle (-6 dB @ 2 kHz)	120°
Coverage Angle (-6 dB @ 8 kHz)	150°
Directivity Factor (Q)	4.28 (Averaged 100 Hz - 10 kHz); 5.25 @ 2 kHz
Directivity Index (DI)	5.44 dB (Averaged 100 Hz - 10 kHz); 7.2 dB @ 2 kHz
Tap Selector	6-Position rotary switch with voice coil direct (8 Ohm)

### Transformer Taps

70.7 V	Output	100 V	Output	25 V	Output
66 W	111 dB	66 W	111 dB	5 W	100 dB
35 W	108.5 dB	35 W	108.5 dB	2.5 W	97 dB
19 W	106 dB	19 W	106 dB	1.25 W	94 dB
10 W	103 dB	10 W	103 dB	0.75 W	92 dB
5 W	100 dB				

### Transducers

Low Frequency Driver	1 x 165 mm (6.5 in) Treated fiber cone, cloth surround
High Frequency Driver	1 Compression driver with waveguide and 25.4 mm (1 in) exit
Low Frequency Voice Coil	34 mm (1.36 in)
Crossover Frequency	3 kHz

### Network Type

Low Pass	18 dB per octave, 3rd order
High Pass	18 dB per octave, 3rd order
Enclosure Material	Injection molded ABS, glass fiber reinforced
Motor Board	Cast aluminum
Grille	Iridite-plated steel with powder-coat finish
Inputs	4 Pin, 5 mm Euroblock for individual or daisy chain connection
Colors	Black or white
Height	363.6 mm / 14.31 in
Diameter	307.3 mm / 12.10 in
Weight	7.3 kg / 16.2 lbs
Shipping Weight	N/A

### Accessories

Included	Hanging hardware, Euroblock connector & terminal weather boot
Optional	Surface-Mount Bracket (AC-RS-SM6)
Packaging	1 per box

<sup>1</sup> Frequency response is measured in full space.

<sup>2</sup> Continuous power rating, EIA-426-B test.

<sup>3</sup> 2.83 Volts at a distance of 1 meter.

SoundTube continually develops new product innovations and improvements. Updates to existing products without prior notice are an example of SoundTube's drive for constant improvement.

### Preliminary Technical Information

The information in this document reflects preliminary data. Items including polar plots, frequency, phase and impedance response graphs will be added when final data are available.

### Key Features

- BroadBeamHP<sup>®</sup> waveguide technology delivers a consistent dispersion pattern for maximum coverage area per speaker (up to 10 kHz, EASE<sup>™</sup> documented).
- One 165 mm (6.5 in) treated fiber driver and one compression driver with a 25.4 mm (1 in) exit mounted to a proprietary cast-aluminum M6<sup>™</sup> baffle and heat sink.
- 66 Watt transformer and high output (112.5 dB) for the sound reinforcement and PA markets.
- Easy-access 6-position selectable tap switch for 25, 70.7, and 100 Volt applications with voice coil/8 Ohm direct simplifies ordering and inventory tracking.
- Weatherized components for indoor/outdoor applications
- 92.5 dB average sensitivity offers high-output capabilities and reduced amplification costs.
- Includes hanging hardware with aircraft cables and integrated SpeedClamp<sup>™</sup> self-locking wire grip for fast, easy & secure installation. Also includes Euroblock connector & terminal weather boot.
- Optional accessory: surface-mount bracket (AC-RS-SM6).
- High quality black or white paint finish.

### Description

The HP690i is a premium 6.5" 2-way, ported high-efficiency, high-SPL loudspeaker for distributed or 8 Ohm applications. The HP690i incorporates a dedicated 6.5" treated fiber driver and high-power compression transducer with a BroadBeamHP<sup>®</sup> waveguide to deliver a consistent dispersion pattern and superb intelligibility for the foreground music, sound reinforcement and PA markets. The HP690i incorporates a 66 Watt transformer with a 6-position tap switch and voice coil/8 Ohm direct position. Hanging hardware is included and features a fast-action SpeedClamp<sup>™</sup> for easy and secure installation.

### Applications

Engineered for installations requiring full-range background/foreground music plus



### Frequency Response

**N/A**

paging, the HP690i delivers a smooth and even coverage pattern. Ideal for warehouses, gyms, aerobic rooms, airports, super stores, arenas, theme parks, transportation and shipping centers, stadiums and other high-SPL or long-throw applications.

For professional sound reinforcement applications, indoors or out, the HP690i includes a cast-aluminum M6™ motor-board, iridite-plated, powder-coated steel grille, durable enclosure design and terminal weather boot.

### BroadBeamHP® Wide Dispersion Technology

SoundTube's proprietary BroadBeamHP® technology incorporates a high-frequency compression driver with a 1" exit mated to a treated fiber woofer. The BroadBeamHP® technology delivers a 90° dispersion pattern across the upper registers of the frequency spectrum (up to 10 kHz, EASE™ documented). The result is an audio system with fewer speakers, reduced power needs, shorter installation time and cost savings on shipping and labor.

### Phase/Impedance Reponse

**N/A**

### Beamwidth (-6 dB)

**N/A**

### Directivity Index (DI)

**N/A**

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## Patented SoundTube Technologies

SoundTube entertainment is consistently developing new technologies that enhance audio product performance. SoundTube Entertainment innovations are protected by multiple U.S. and international patents, which explicitly cover SoundTube dome, enclosure mounting and dispersion technologies. SoundTube Entertainment actively defends its patents in order to protect SoundTube resellers and end-users.

## Technical Data and Specification Tools

### Technical Data

SoundTube Entertainment strives to provide complete and effective technical information and data to dealers, engineers and designers. All data are available from SoundTube Entertainment or at [www.soundtube.com](http://www.soundtube.com).

### Data Acquisition

All performance data acquired at

SoundTube's Technical Measurement Center (TMC) are analyzed using a variety of standard measurement techniques, including Measured Length Sequence (MLS) and Time Delay Spectrometry (TDS). Performance, development and data acquisition tools include: Gold Line TEF 20, CLIO, LMS, LEAP, and proprietary modeling software. EASE™ data are acquired through an automated TEF 20/Outline/EASE™ interface.

**EASE™ Data** – 3-D polar plots.

**SoundTubeSPEC™** – Proprietary SoundTube speaker placement software.

## Architectural Specifications

The loudspeaker shall consist of a 165 mm (6.5 in) low-frequency transducer and a high frequency transducer with a 1" exit and a frequency-dividing network installed in a ported enclosure. The low-frequency voice coil diameter shall be 34 mm (1.36 in).

The performance specifications of a typical production unit shall be as follows: Useable frequency response shall extend from 62 Hz – 22 kHz (-10 dB, no external

equalization). Measured sensitivity (2.83 Volt input, 1 meter) shall be at least 92.5 dB. The speaker shall have a nominal impedance of 8 Ohms and be available for 25/70.7/100 Volt modes with a voice coil/8 Ohm direct. The frequency-dividing network shall have a crossover frequency of 3 kHz with a slope of 18 dB per octave (3rd order). Rated power capacity shall be at least 100 Watts continuous power (RMS), and shall conform to EIA-426-B testing. Maximum continuous output at 1 meter shall be 112.5 dB.

The low-frequency transducer shall have a treated fiber cone and cloth surround.

Installation for the HP690i shall be by 10' aircraft cable affixed to the speaker chassis hook. For seismic and safety redundancy, a secondary aircraft cable shall be included and shall attach to the speaker chassis via hook and cable system. The external wiring shall be a 4-pin 5 mm Euroblock connector for 8 Ohm or distributed systems and shall accept from 10 – 22 gauge wire. The system shall be for indoor and outdoor applications and have a weather-resistant terminal boot covering all wire connections.

The enclosure shall be constructed of injection-molded, glass reinforced ABS. The

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## Polar Plots

**N/A**

# HP690i

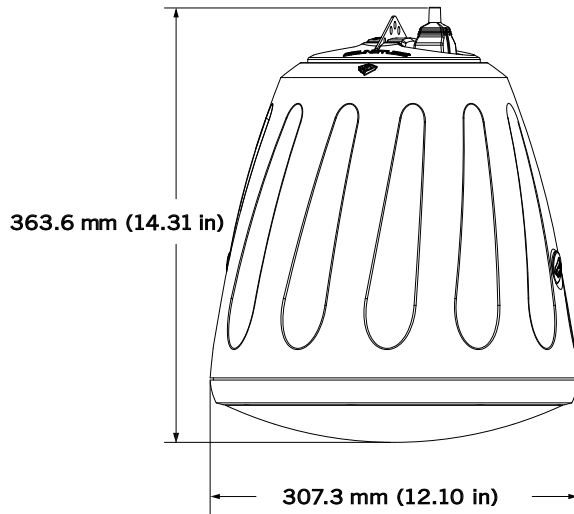
## Open Ceiling Speaker

Preliminary Technical Information for System Engineers



**SOUNDTUBE**  
ENTERTAINMENT

### Mechanical Drawings



grille shall be constructed of iridite-plated, powder-coated steel for lasting performance in the elements. Overall cabinet dimensions shall be no more than 363.6 mm (14.31 in) in height by 307.3 mm (12.10 in) in diameter and weigh no more than 7.3 kG (16.2 lbs).

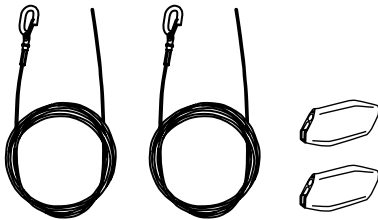
The HP690i shall ship with hanging hardware, Euroblock connector and terminal weather boot. Optional accessories for the HP690i include surface-mount bracket (AC-RS-SM6), 20' hanging cable (AC-RS-HH-20) and 10' split loom tubing (AC-SLT-10) for architectural applications.

The system shall be the HP690i with hanging hardware for both low- and high-impedance applications.

### SoundTube Entertainment

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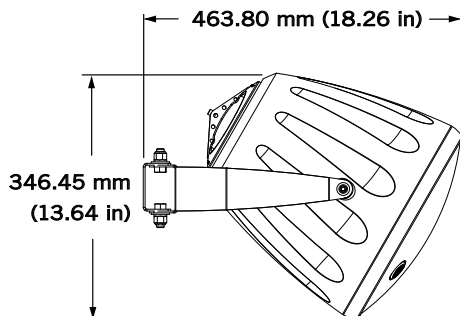
### Included Accessories



#### Hanging Hardware: Main & Safety Cables w/ SpeedClamp™

SoundTube's hanging cable kit incorporates hanging & safety cables & fasteners for an integrated and easy-to-install system. Hanging & safety cables are infinitely adjustable to 2.74 M (9.0 ft).

### Optional Accessory



Surface-Mount Bracket (AC-RS-SM6)

SoundTube Entertainment manufactures a complete line of speakers for:  
**Open-Ceiling • In-Ceiling • Surface-Mount • Outdoor • Sound-Focusing**

All SoundTube products are designed and engineered in the USA.